

**REMARKS**

This is a response to the Office Action dated March 17, 2006.

**I. SUMMARY OF OFFICE ACTION**

In the Office Action, Claims 1-2, 4-6, 8-12 and 14-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 10029046 in view of Takeuchi et al. (U.S. Patent No. 6,536,504). Claims 3 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP 10029046 in view of Takeuchi et al. and further in view of either DE 19757704 or Yoshioka et al.

The Examiner indicated that Applicants' arguments previously submitted with respect to Claims 1-6 and 8-20 have been considered but are moot in view of the new grounds of rejection.

**II. APPLICANTS' RESPONSE**

**A. Claims 1-3, 5, 6, and 8-10**

Claim 1 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP 10029046 in view of Takeuchi et al. In response, Applicants have amended Claim 1 to further recite that the panel has means for varying the inclination with respect to the vertical strip casting plane. The basis for the amendments may be found in the instant specification as originally filed, specifically, Figure 2 and col. 6, line 29-col. 7, line 2. As discussed in the instant specification, the means for varying the inclination of the panel with respect to the vertical strip casting plane makes the cooling effect of the gas jets on the surface of the strip adjustable. For example, the amount of cooling accomplished may be increased closer to the counter-rotating rows while the amount of cooling due to the gas jets furthest away from the counter-rotating rows remains constant.

Applicants respectfully submit that the cited prior art does not disclose, suggest or make obvious the panel having means for varying the inclination with respect to the vertical strip casting plane. In support thereof, Applicants respectfully direct the Examiner to the abstract and the representative figure of JP '046. As shown, the cooling panels 25a, 25b along with novels 24a, 24b do not appear to be adjustable with respect to their positions with respect to the vertical strip casting plane. Hence, JP '046 does not disclose a panel having means for varying the inclination with respect to the vertical strip casting plane.

Additionally, Takeuchi et al. does not disclose a panel having means for varying the inclination with respect to the vertical strip casting plane. The Examiner refers to flaps 82 of Takeuchi et al. as a pair of cooling panels. However, the flaps 82 identified in Takeuchi et al. are not a pair of cooling panels. Col. 6, lines 60-63 discusses the seal rolls 6a and 6b which as shown in Figure 6 are attached to flaps 82. Accordingly, it is our understanding that flaps 82 are not cooling panels but are extensions such that the distance between the vertical strip casting plane and the seal rolls 6a and 6b may be adjustable. Takeuchi et al. does not appear to teach varying the inclination of a cooling device with respect to the vertical casting plane to control temperature along a length of the strip. The seal rolls 6a, 6b (i.e., cooling device) does not control temperature of the strip along its length. Rather, the seal rolls 6a, 6b contact the strip at a single point. Accordingly, one of ordinary skill in the art would not have been motivated to make the panel adjustable with respect to the inclination of the panel with respect to the vertical strip casting plane based on the pivotable nature of the seal rolls 6a, 6b.

For the foregoing reasons, Applicants respectfully submit that the cited prior art does not disclose, suggest or make obvious the invention recited in amended Claim 1, and thus, Claim 1 is believed to be in condition for allowance.

Claim 1 is further believed to be in condition for allowance for containing additional patentable subject matter. In particular, Claim 1 recites that the panel is inclined at a pre-determined angle of value different from zero with respect to said vertical strip casting plane. In JP '046, the cooling panels 25a and 25b are parallel with respect to the vertical strip casting plane and not at an angle different from zero with respect thereto. In Takeuchi et al., the orientation of the cooling panels is unknown. In support thereof, Applicants respectfully direct the Examiner's attention to col. 6, lines 46-49 which mentions the cooling panels but not its orientation.

Even in DE 19757704, the cooling panel is not at an angle different from zero with respect to the vertical strip casting plane, as understood. In DE '704, the vertical strip casting plane is not believed to be a flat plane but rather an arcuate plane which begins from the kissing point of the counter-rotating rolls and curves toward the right toward rolls 9 and 9'. As understood, the cooling panels 13 and 13' are equidistant to the curved vertical strip casting plane along the entire length of the cooling panel. As such, the cooling panel of DE '704 is not

inclined at a pre-determined angle different from zero with respect to said vertical strip casting plane.

Moreover, there is no motivation to modify devices of JP '046, Takeuchi et al. and DE '704 such that the panel is inclined at a pre-determined angle of value different from zero with respect to said vertical strip casting plane. Thus, the cited prior art does not disclose, suggest or make obvious the limitation of the panel being inclined at a pre-determined angle of value different from zero with respect to said vertical strip casting plane, and thus, Claim 1 is believed to be in condition for allowance.

Claim 1 is further believed to be in condition for allowance for containing additional patentable subject matter, namely, that the panel is made of refractory material. Takeuchi et al. discloses at col. 9, lines 28-30 that radiant tubes 53 may be fabricated from heat resistant steel or ceramic. However, such disclosure does not motivate one of ordinary skill in the art to make the cooling panels of refractory material. The tubes 53, as shown in Figure 1 of Takeuchi et al. is not adjacent the counter-rotating rolls or immediately below the counter-rotating rolls. Rather, the tubes are placed at a distance away from the counter-rotating rolls. Accordingly, there is no motivation to incorporate refractory material into the panels based on the disclosure of Takeuchi et al. Hence, Applicants respectfully submit that Claim 1 is believed to be in condition for allowance.

For the foregoing reasons, Applicants respectfully submits that Claim 1 is in condition for allowance. The dependent claims of Claim 1, namely, Claims 2, 3, 5, 6 and 8-10 are believed to be in condition for allowance for being dependent upon an allowable base claim and for containing additional patentable subject matter.

B. Claims 11-20

In the Office Action Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over JP '046 in view of Takeuchi et al. In response, Applicants have amended Claim 11 to recite that the panel has means for varying the inclination with respect to the vertical strip casting plane. For the same reasons discussed above in relation to Claim 1 with respect to the means for varying limitation, Applicants respectfully submit that Claim 11 is believed to be in condition for allowance. The dependent claims of Claim 11, namely, Claims 2, 3, 5, 6, and 8-

10 are believed to be in condition for allowance for containing additional patentable subject matter and for being dependent upon an allowable base claim.

C. Claims 21-25

Applicants respectfully request entry of new Claims 21-25 into the prosecution of the above-identified patent application. Claim 21 is believed to be in condition for allowance for containing patentable subject matter. In particular, Claim 21 recites that the panel is placeable adjacent the metal strip at an angle greater than zero such that an upper distal end of the panel is further away from the metal strip compared to a lower distal end of the panel. Applicants respectfully submit that the cited prior art does not disclose such limitation.

In support thereof, Applicants respectfully direct the Examiner's attention to JP '046. As shown in the figures, the panels 25a and 25b are adjacent the metal strip at an angle equal to zero wherein the upper distal end of the panel is at a distance equal to the distance that the lower distal end of the panel is away from the metal strip. As discussed above, in Takeuchi et al., the orientation of the panels are not disclosed. In DE '704, the panel is placed adjacent the metal strip at an angle equal to zero in that the upper distal end of the panel is placed at a distance from the metal strip equal to the distance that the lower distal end of the panel is placed away from the metal strip. For the foregoing reasons, Applicants respectfully submit that the cited prior art does not disclose, suggest or make obvious the limitation of a panel placeable adjacent the metal strip at an angle greater than zero such that an upper distal end of the panel is further away from the metal strip compared to a lower distal end of the panel. Thus, Claim 21 is believed to be in condition for allowance.

The dependent claims of Claim 21, namely, Claims 22-25 are believed to be in condition for allowance for containing additional patentable subject matter. For example, in Claim 24, the panel is pivotably hinged at the lower distal end of the panel for adjusting the angle of the panel to the metal strip. Such limitation is substantially similar to the limitation discussed in Claim 1, namely, "means for varying the inclination with respect to the vertical strip casting plane." For the same reasons discussed in relation to Claim 1 regarding such limitation, Applicants respectfully submit that Claim 24 is believed to be in condition for allowance for containing patentable subject matter. For the foregoing reasons, Claims 22-25 are believed to be in

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condition for allowance for containing additional patentable subject matter and for being dependent upon an allowable base Claim 21.

### III. CONCLUSION

For the foregoing reasons, Claims 1-3, 5-6, and 8-25 are believed to be in condition for allowance. An early notice of allowance is therefore respectfully requested. Should the Examiner have any suggestions for expediting allowance of the above-identified application, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

If any additional fee is required, please charge Deposit Account Number 19-4330.

Respectfully submitted,



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